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TRANSLATION OF CLAIMS AMENDED UNDER ART. 19 PCT

5 1. A method for measuring the displacement of a fluid
in a conduit (3), by calculating a difference in
ultrasound transit time between two transducers (1, 2;
12, 13) in one direction and in the other, characterised
by the steps:

- 10 - of simultaneously exciting the two transducers (1,
2; 12; 13), then
- simultaneously measuring signals received at each
one of the transducers originating from the other
transducer,
15 and by a step of synchronously digitizing the signals
received at each one of the transducers.

2. The method according to claim 1, characterised in
that the step of simultaneous excitation is performed
20 using a single circuit (16).

3. The method according to claim 1 or 2,
characterised in that calculation of the difference in
transit time comprises intercorrelating signals received
25 at each one of the transducers and seeking an
intercorrelation maximum.

4. The method according to claim 1 or 2,
characterised in that the calculation of the difference
30 in transit time comprises intercorrelating received
signals, calculating the Hilbert transform of
intercorrelation, and seeking zeros of the Hilbert
transform.

35 5. The method according to claim 4, characterised in
that the seeking of zeros is performed by polynomial
interpolation of the Hilbert transform, preferably by
interpolation using a third degree polynomial.

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6. The method according to one of claims 1-5, characterised in that it comprises a calibration step by measuring ultrasound propagation time outside the fluid
5 vein.

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7. The method according to claim 6, characterised in that the calibration step comprises measurement of transit time between the transducers for two fluids of
10 different and known velocities.

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8. The method according to one of claims 1-7, characterised in that it comprises a step of correcting values of ultrasound propagation time outside the fluid
15 vein, as a function of temperature.

9. A driver circuit for a device for measuring displacement of the fluid in a conduit (3), with at least two transducers (1, 2; 12, 13) defining a measurement
20 chord, the circuit comprising:

- means for simultaneously exciting (16) two transducers;
- means (17, 18) for simultaneously measuring received signals at each one of the transducers
25 originating from the other; and
- switching means (15) for successively connecting the excitation means and measurement means to the terminals (10, 11) of the transducers,
as well as means for synchronously digitizing signals
30 received at one of the transducers.

10. A circuit according to claim 9, characterised in that the switching means comprise a multiplexing circuit.

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35 11. A circuit according to claim 9 or 10, characterised in that the measurement means comprise at least one amplifier (19, 20) and at least one analog/digital converter (21, 22).

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12. A device for measuring fluid displacement in a conduit, comprising at least two transducers and a driver circuit according to claim 9, 10 or 11.

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